EFC – LGDSA 2nd Baltic Colposcopy Conference, 19-20 April 2018
RIGA

Colposcopy at the Crossroads

CWE Redman

EFC-LGDSA 2nd Baltic Conference

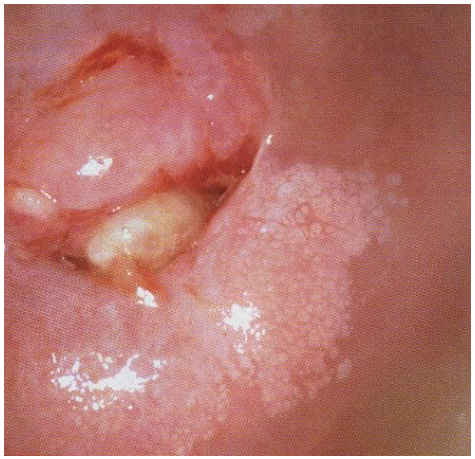
Acetowhitening

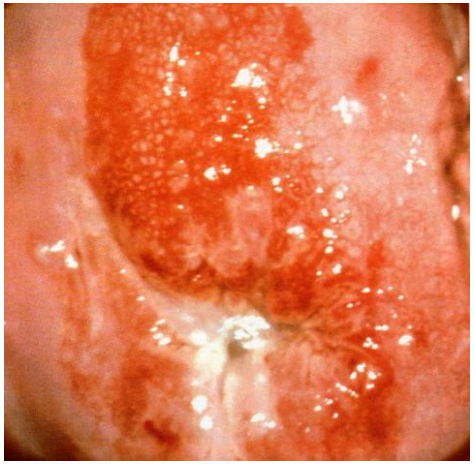
Metaplasia → CIN3

Density

Vasculature - mosaic

LG CIN → HG CIN





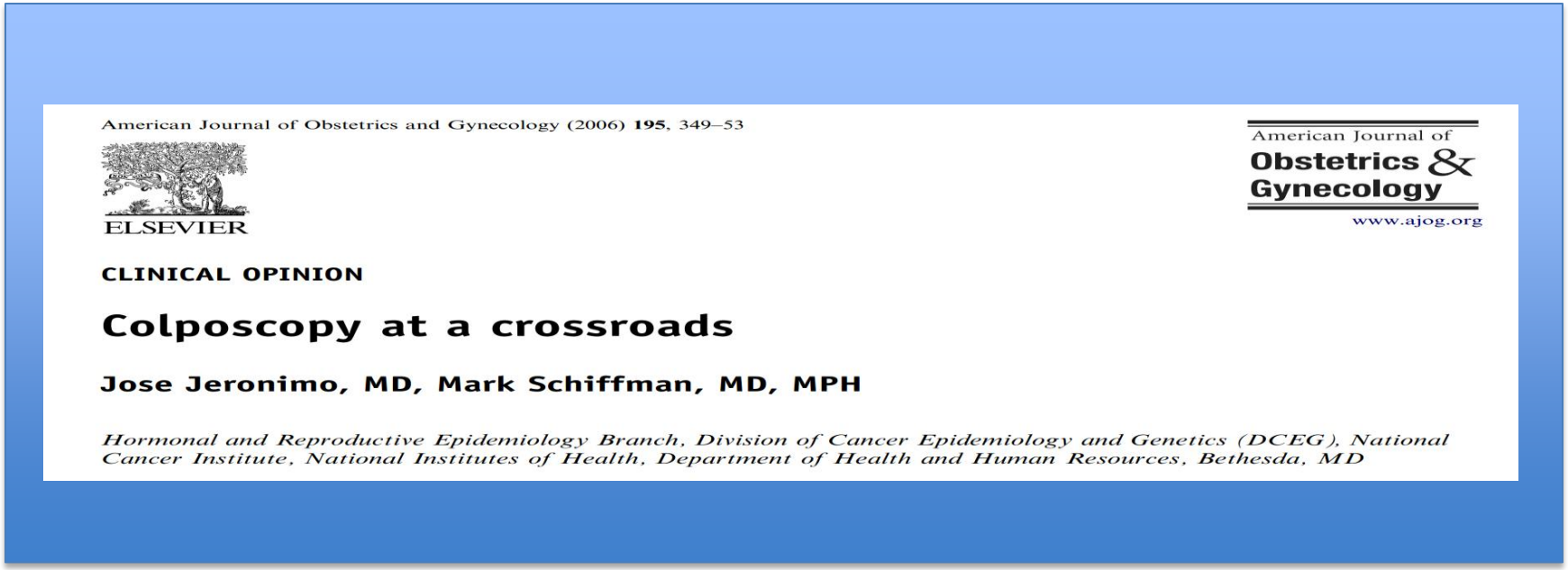
Coarseness

Making a colposcopic diagnosis

- Colposcopic imaging
- Referral cytology
- Previous history
- Age
- Smoking

Making the diagnosis

Concern about colposcopy



American Journal of Obstetrics and Gynecology (2006) **195**, 349–53

ELSEVIER

American Journal of
Obstetrics & Gynecology
www.ajog.org

CLINICAL OPINION

Colposcopy at a crossroads

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Hormonal and Reproductive Epidemiology Branch, Division of Cancer Epidemiology and Genetics (DCEG), National Cancer Institute, National Institutes of Health, Department of Health and Human Resources, Bethesda, MD

"…We believe that deficiencies of the colposcopically guided biopsy must be addressed, in particular, the inaccuracy of biopsy placement leading to low sensitivity for detection of CIN3…"

Accuracy of diagnostic biopsy

"Colposcopy compares favourably with other diagnostic tests"

Average Sensitivity = 80%

Average Specificity = 63%

Accuracy of colposcopic-directed punch biopsies: a systematic review and meta-analysis. M Underwood et al. Br J Obstet Gynaecol 2012; 119:1293-1301

Colposcopic accuracy

Lower performance in more recent studies

Sensitivity	50-60%
PPV	60%

ALTS Group Am J Obstet Gynecol 2003; 188: 1393-400

Pretorius et al Am J Obstet Gynecol 2004; 191: 430-4

Bekkers et al Eur J Obstet Gynecol Reprod Biol 2008; 141; 430-4

Context

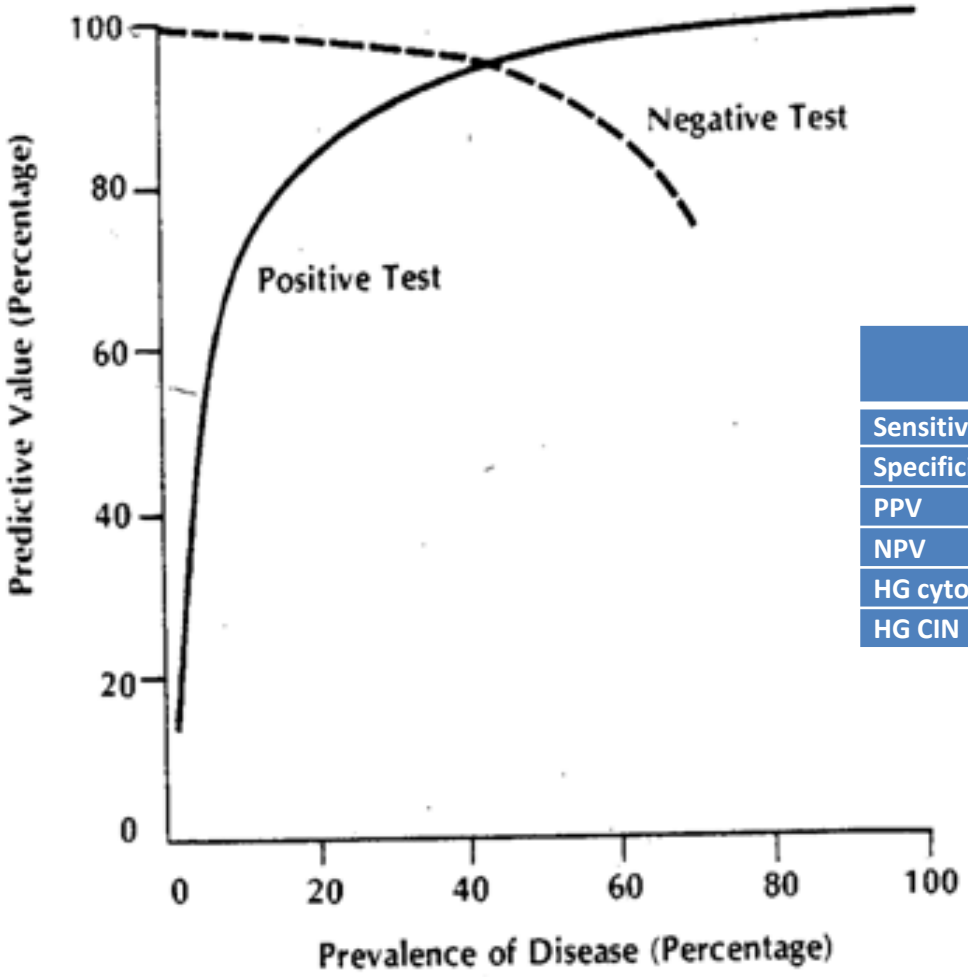
Older studies had higher prevalence HG smears

Association with larger lesions

Increase in low-grade referrals

Test performance influenced by prevalence

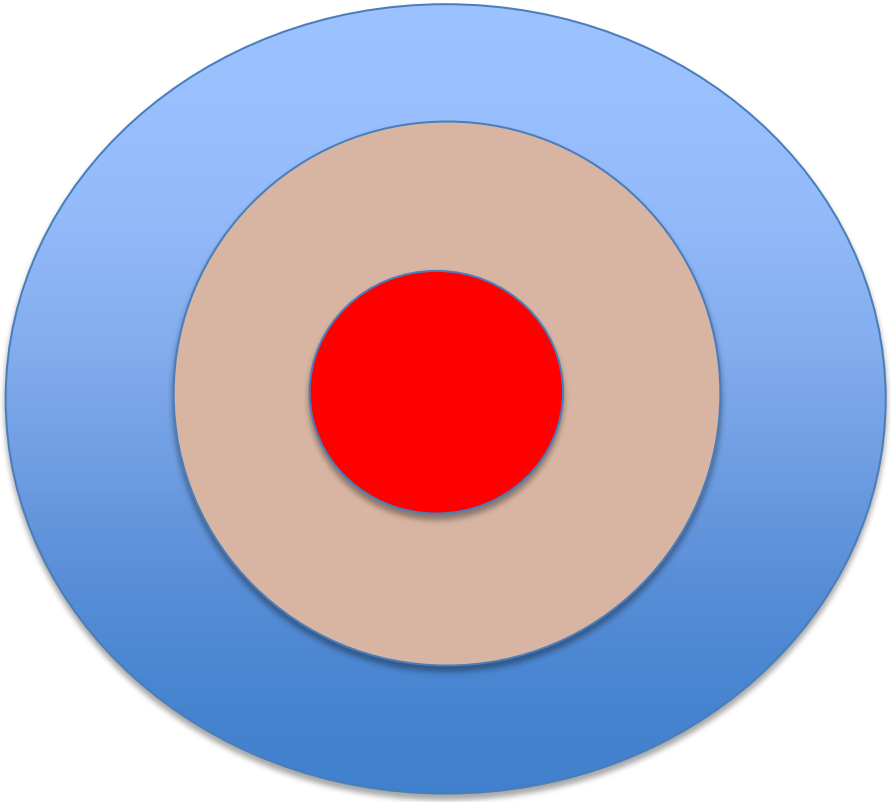
Relationship between disease prevalence and predictive value



	Tidy et al BJOG 2103;120:400-11	van der Marel et al BJOG 2014;121:1117-26
Sensitivity	88.5% (79.9-94.4%)	87.9%
Specificity	38.5% (29.4-48.3%)	44.3%
PPV	53.5% (45.0-61.8%)	54.9%
NPV	80.8% (67.5-90.4%)	82.6%
HG cytology	43.7%	55.4%
HG CIN	44.4%	60%

Relationship between disease prevalence and predictive value in a test with 95% sensitivity and 85% specificity.

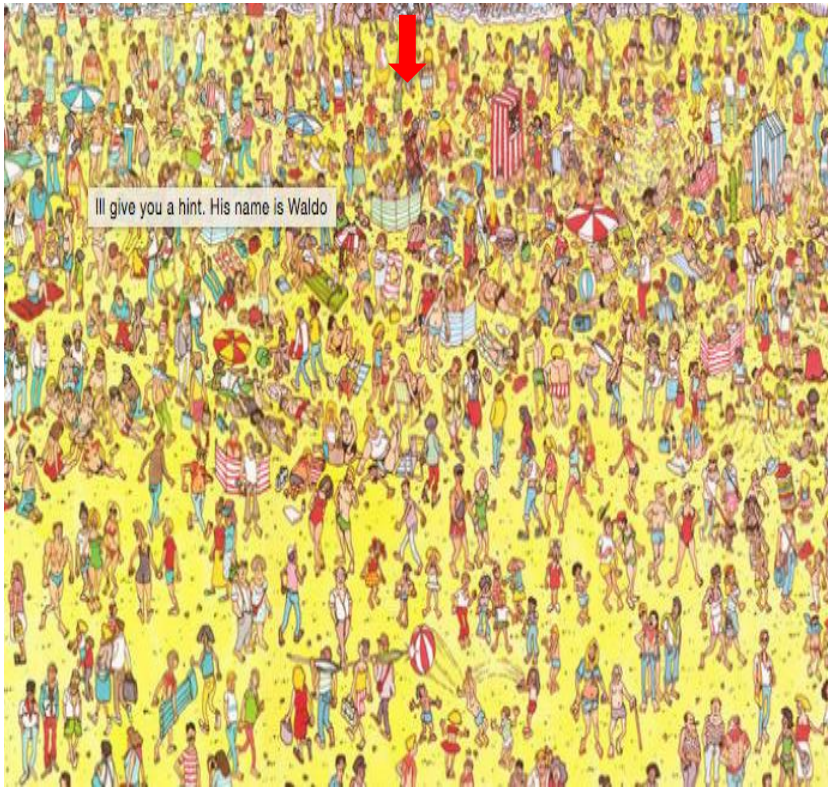
Selection



Challenges of HPV tests

- HPV triage / test of cure (TOC)
- HPV primary screening
- HPV vaccination
- Increase / decrease in number of referrals !!
- Dilution of HG cases

Where’s Wally?



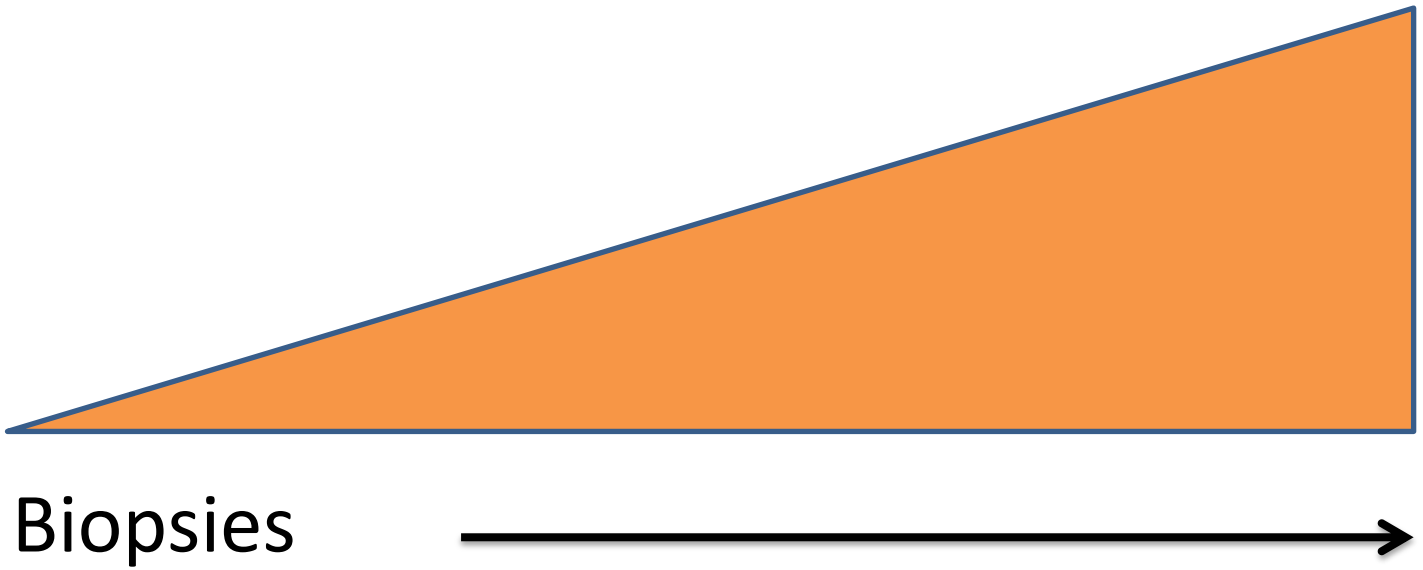
The challenges

- Subjective and quantitative
- Requires high specialization
- High inter- and intra-observer disagreement
- Low sensitivity
- High biopsy sampling error rate

What can we do?

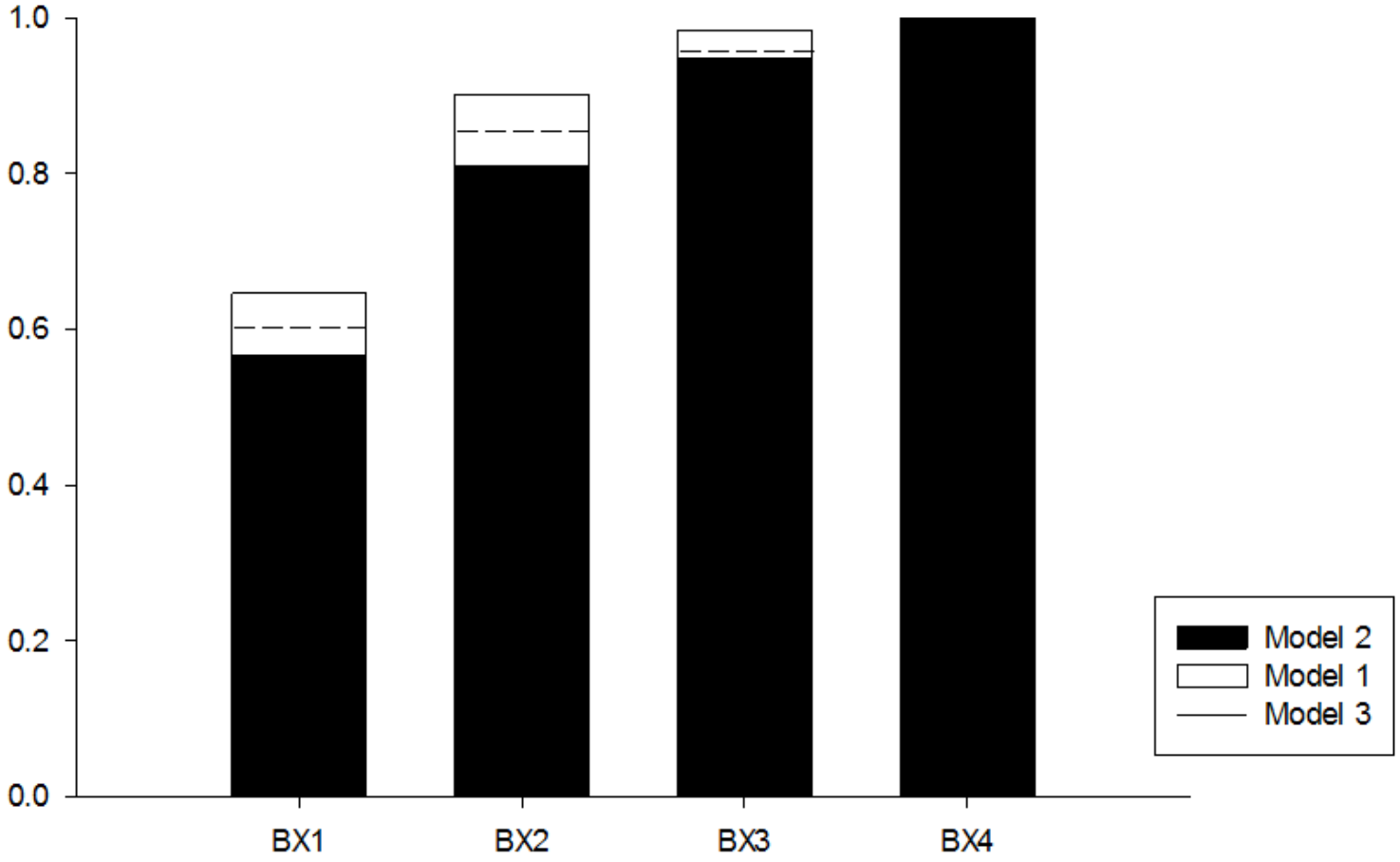
- Number of biopsies ?

Number of Biopsies



Gage 2006
Underwood 2012
Wentzensen 2015

Sensitivity for HSIL for 1-4 directed biopsies



Wentzensen JCO 2014

What can we do?

- Number of biopsies

- Additional random biopsies?

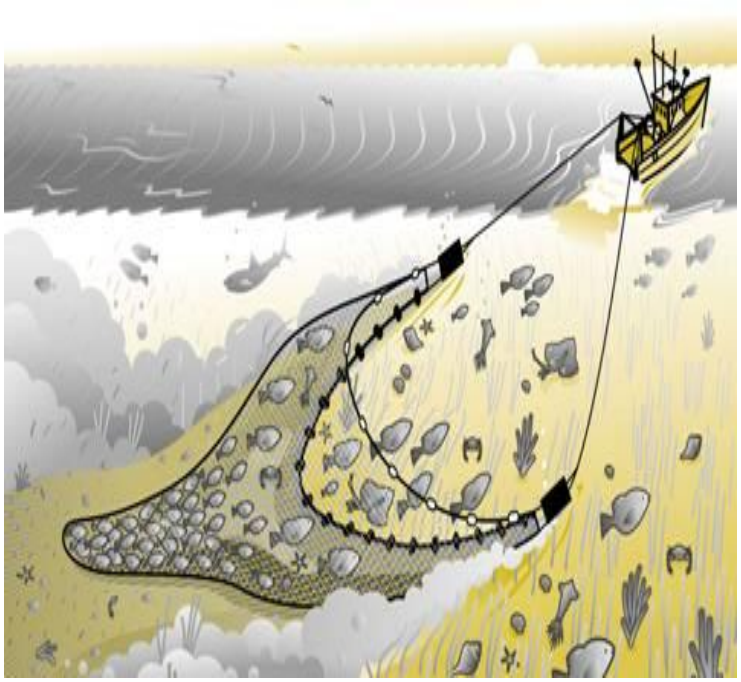
Yield of HSIL for random biopsies

Directed biopsies	Yield of HSIL based on directed biopsies	Additional yield of consensus random biopsies
None	ND	1/22 (4.5%)
1	11/90 (12.2%)	1/76 (1.3%)
2	33/181 (18.2%)	2/152 (1.3%)
3	66/145 (45.5%)	1/125 (0.8%)

- Few HSIL are detected by random biopsies
- No additional CIN3 are detected by consensus random biopsies

Wentzensen JCO 2014

Random versus direct biopsies



Fumble or finesse?

What can we do?

- Number of biopsies
- Additional random biopsies?
- Improve quality of colposcopy?

Colposcopic Experience

Sensitivity was not influenced by type of practitioner

No of biopsies the most important factor

Number of biopsies and sensitivity of colposcopy

Gage et al (ALTS Group): Obstet Gynecol 2006

Comment on studies

Sensitivity of colposcopy CIN3 29-93% in a US trial

TOMBOLA: colposcopy as sensitive as immediate LLETZ

ALTS 11.5% CIN 2+ after a normal colposcopy

UK NHS study 5.3% CIN2+ after a normal colposcopy

Solutions

- Training
- Certification
- Quality assurance
- Adjunctive technologies

Adjunctive technologies

Adjunctive Technologies

- Will improve performance
- Additional value will depend on context
- Is the ‘icing on the cake’
- Will not compensation for poor colposcopy

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